

Client's ref.: TSMC2001-1472

Our ref.: 0503-8768-USf/Yianhou/Kevin/Nelson

What is claimed is:

- 1 1. A dispatch method for Long-duration Processing Batch
- 2 Equipment (LPBE), comprising the steps of:
- 3 retrieving equipment candidates having at least one
- 4 capability compatible with that of the LPBE from
- 5 among a plurality of equipment tools preceding the
- 6 LPBE in process order;
- 7 selecting one of the candidates;
- 8 retrieving lots corresponding to the selected candidate;
- 9 grouping and sorting the lots, such that a plurality of
- 10 batches is obtained, in which each batch comprises
- 11 a predetermined number of lots;
- 12 designating at least one of the batches as a reserve batch;
- 13 and
- 14 executing a process by the selected candidate
- 15 corresponding to the capability on the reserve batch,
- 16 and forwarding the processed batch to the LPBE.

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1 2. The method of claim 1 further comprising performing
2 a LPBE process on the batch forwarded from the selected
3 candidate.

1 3. The method of claim 1 wherein the LPBE comprises
2 furnace equipment.

1 4. The method of claim 1 wherein the equipment tools
2 comprise cleaning equipment.

1 5. The method of claim 1 wherein grouping and sorting the
2 lots comprises:

3 grouping the lots according to capability, such that a

4 plurality of lot groups is obtained;

5 sorting the lots of each lot group according to a priority

6 rule; and

7 sorting the lot groups according to the priority rule, such

8 that the batches are obtained, and each batch has a

9 priority.

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1 6. The method of claim 5 wherein the predetermined number
2 of the lots in each batch is the maximum number of lots that can
3 be handled by the LPBE in one processing cycle.

1 7. The method of claim 6 further comprising splitting
2 each lot group if the number of lots in the lot group exceeds
3 the maximum number.

1 8. The method of claim 5 wherein the reserve batch is
2 designated according to the capability and the priority of each
3 batch.

4 9. The method of claim 5 wherein the priority rule is used
5 to determine whether hot lots exist in any lot group.

1 10. The method of claim 5 wherein the priority rule is used
2 to determine a stage target of the lots in each lot group.

1 11. The method of claim 5 wherein the priority rule is used
2 to determine the priority of each lot group.

1 12. The method of claim 5 wherein the priority rule is used
2 to determine the quantity of wafers in each lot group.

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- 1 13. The method of claim 5 wherein the priority rule is used
2 to determine a queue time of the lots in each lot group.
- 1 14. A dispatch system for Long-duration Processing Batch
2 Equipment (LPBE), comprising:
3 a plurality of equipment tools; and
4 a LPBE having at least one process capability, able to
5 identify equipment candidates having the same
6 capability from among the equipment tools preceding
7 the LPBE, select one candidate, retrieve lots
8 corresponding to the selected candidate, group and
9 sort the lots to obtain a plurality of batches
10 according to a lot grouping and sorting method, in
11 which each batch comprises a predetermined number of
12 lots, and designate at least one of the batches as
13 a reserve batch;
14 wherein the selected candidate executes a process
15 corresponding to the capability on the reserve batch,
16 and forwards the processed batch to the LPBE.

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1 15. The system of claim 14 wherein the LPBE further
2 performs a LPBE process on the batch forwarded from the selected
3 candidate.

1 16. The system of claim 14 wherein the LPBE comprises
2 furnace equipment.

1 17. The system of claim 14 wherein the equipment tools
2 comprises cleaning equipment.

1 18. The system of claim 14 wherein the lot grouping and
2 sorting method comprises the steps of:

3 grouping the lots according to capability, such that a

4 plurality of lot groups is obtained;

5 sorting the lots of each lot group according to a priority

6 rule; and

7 sorting the lot groups according to the priority rule, such

8 that the batches are obtained, and each batch has a

9 priority.

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1 19. The system of claim 18 wherein the predetermined
2 number of the lots in each batch is the maximum number of lots
3 that can be handled by the LPBE in one processing cycle.

1 20. The system of claim 19 wherein each lot group is
2 further split if the number of lots in the lot group exceeds the
3 maximum number.

1 21. The system of claim 18 wherein the reserve batch is
2 designated according to the capability and the priority of each
3 batch.

4 22. The system of claim 18 wherein the priority rule is
5 used to determine whether hot lots exist in any lot group.

1 23. The system of claim 18 wherein the priority rule is
2 used to determine a stage target of the lots in each lot group.

1 24. The system of claim 18 wherein the priority rule is
2 used to determine the priority of each lot group.

1 25. The system of claim 18 wherein the priority rule is
2 used to determine the quantity of wafers in each lot group.

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1 26. The system of claim 18 wherein the priority rule is
2 used to determine a queue time of the lots in each lot group.

1 27. A dispatch method, comprising the steps of:
2 selecting one of equipment tools preceding a target
3 equipment in process order, in which the equipment
4 tools have at least one capability compatible with
5 that of the target equipment;
6 designating at least one batch corresponding to the
7 selected equipment tool before it is processed by the
8 selected equipment tool; and
9 forwarding the batch to the target equipment after it is
10 processed by the selected equipment tool.

1 28. The method of claim 27 wherein the batch comprises a
2 predetermined number of lots being grouped and sorted according
3 to a priority rule and respective capability.

1 29. The method of claim 28 wherein the predetermined
2 number of the lots in the batch is the maximum number of lots

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3 that can be handled by the target equipment in one processing
4 cycle.58

1 30. The method of claim 27 wherein the batch is designated
2 according to the capability and a priority of the batch.

1 31. The method of claim 28 wherein the priority rule is
2 used to determine whether hot lots exist in each batch, a stage
3 target of the lots in each batch, a priority of each batch, the
4 quantity of wafers in each batch, or a queue time of the lots
5 in the batch.

1 32. A dispatch method for Long-duration Processing Batch
2 Equipment (LPBE), comprising the steps of:

3 reserving lots corresponding to at least one equipment tool
4 preceding the LPBE in process order before the lots
5 are processed by the equipment tool; and
6 forwarding the lots to the LPBE after it is processed by
7 the equipment tool.

1 33. The method of claim 32 wherein the equipment tool has
2 at least one capability compatible with that of the LPBE.

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1 34. The method of claim 32 further comprising grouping and
2 sorting the lots into batches according to a priority rule and
3 respective capability.

1 35. The method of claim 34 wherein each batch comprises
2 a predetermined number of the lots, and the predetermined number
3 is the maximum number of lots that can be handled by the LPBE
4 in one processing cycle.

1 36. The method of claim 34 wherein the priority rule is
2 used to determine whether hot lots exist in each batch, a stage
3 target of the lots in each batch, a priority of each batch, the
4 quantity of wafers in each batch, or a queue time of the lots
5 in the batch.